REMARKS

In the Office Action mailed on August 10, 2006, the Examiner rejected claims 1-34. Claims 1-22 and 24-34 are presently amended to address clerical issues without changing the subject matter of the claims. Claims 1-4 and 14 are presently canceled and no claims are presently added. Accordingly, claims 5-13 and 15-34 are currently pending. Reconsideration of the application in view of the remarks set forth below is respectfully requested.

Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-4 and 14 under 35 U.S.C. § 102(e) as being anticipated by Diab et al. (U.S. Patent No. 5,632,272)("Diab"). Claims 1-4 and 14 are canceled by the present Response because similar claims are being prosecuted in a related application. While Applicants do not agree with the Examiner's rejection, Applicants do not presently address it because it is moot in the present case.

Rejection Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 5-9, 11 and 12 under 35 U.S.C. § 103(a) as being obvious over Diab in view of Zhorian et al. (U.S. Patent No. 5,524,631)("Zhorian"). The Examiner rejected claim 10 as being obvious over Diab in view of Zhorian and further in view of Courtin et al. (U.S. Patent No. 3,916,878)("Courtin"). Applicants respectfully traverse the rejections.

Embodiments of the present invention are directed to a pulse oximeter with multiple different calculation modules. *See* Application, page 6. In other words, present embodiments may utilize two or more separate modules that calculate saturation values by processing the same input data through *different* algorithms. *See id.* An example of this is illustrated in FIG. 1A of the application, wherein oximetry data (IR & RED) is shown passing into a saturation calculation algorithm (box 50) in two parallel data streams. Each data stream includes the same information but the information is treated differently to provide two differently calculated saturation values. For example, a first saturation value may be calculated using a harmonic filter 17 and a Kalman-filter-based cardiac gated averaging (CGA) technique 16, and a second saturation value may be calculated based on raw data received directly from a band pass filter. *See* Application, pages 6 and 8. Once the two saturation values are separately determined, the calculation with the "best" or most accurate output may be chosen according to confidence levels (box 26) associated with each calculation. *See* Application, page 8. For example, one calculated saturation value may have been filtered to reduce noise effects and another calculated saturation value may have been determined based on an assumption that a clean signal was utilized. Each of these calculations may have a different confidence value associated with it based on the method of determination. *See* Application, page 6, 9, and 34. Accordingly, in one embodiment, if no significant noise was present in the signal, the confidence level of the calculation that assumes a clean signal may be higher than the filtered value and, thus, may be selected as a representative saturation value.

Accordingly, claim 5 recites, *inter alia*, "a first oxygen saturation calculation module configured to determine a first oxygen saturation value *using a first saturation calculation algorithm* applied to the first and second digital signals, a second oxygen saturation calculation module configured to determine a second oxygen saturation value *using a second saturation calculation algorithm* applied to the first and second digital signals, and a best saturation module configured to arbitrate between the first and second oxygen saturation values based on *a saturation confidence* associated with the first and second oxygen saturation values to select a best oxygen saturation value." (Emphasis added).

Applicants assert that Diab and Zahorian, whether considered separately or in a hypothetical combination, fail to teach all of the features of the present claims. For example, claim 5 of the present application is directed to two oxygen saturation calculation modules that utilize different algorithms, i.e., a *first* oxygen saturation calculation algorithm and a *second* oxygen calculation algorithm. For example, as set forth above, the first oxygen calculation module may utilize a harmonic filter and a Kalman-filter-based cardiac gated averaging (CGA) technique, while the second oxygen calculation module may utilize raw data. Applicants have not found anything in Diab that suggests that two *different* calculation algorithms are utilized to determine oxygen saturation. Rather, Diab merely teaches that "a saturation determination module can be provided for each matched pair of filter elements for parallel processing." Diab et al., col. 51, lines 4-8. Based on Applicant's best understanding, it appears that Diab may use

multiple calculation modules that use the *same* algorithm, not multiple calculation modules that use *different* algorithms. *See* Diab et al., col. 51, line 4-43. Indeed, Applicants believe this position is supported by FIG. 23 of Diab. Further, Applicants assert that Zahorian also fails to disclose that two *different* calculation algorithms are utilized to determine oxygen saturation. Indeed, the Examiner merely cites Zahorian for its alleged teachings related to pulse rate determinations.

Additionally, Applicants assert that Diab and Zahorian fail to teach a best saturation module configured to arbitrate between the first and second oxygen saturation values based on *a saturation confidence* associated with the oxygen saturation values, as recited in claim 5. In accordance with present embodiments, the confidence associated with each saturation value may be based on the type of calculation used to obtain the value. For example, certain confidence values may be specifically associated with calculations performed using a Kalman filter. *See* Application, page 34, lines 15-20. In contrast, Diab merely teaches that "[t]he output of the saturation equation modules 618 are collected (as represented by the histogram module 620) for each of the matched filter pairs." Diab et al., col. 51, lines 15-18. Once the output is collected, Diab teaches that arterial saturation is "calculated from the histogram by selecting the peak (greatest number of occurrences in the area of interest) corresponding to the highest saturation value." Diab et al., col. 51, lines 34-37. This is not equivalent to the present recitation of a *saturation confidence*. Further, while present claims allow for selection between only two values calculated in *parallel* to determine a best saturation value, the use of a histogram in Diab

suggests that multiple values must be obtained *over time* to enable selection of a "peak." Applicants stress that Zahorian also fails to disclose this feature of the present claim 5. Indeed, as set forth above, the Examiner did not even cited Zahorian for this purpose but, rather, for its alleged teachings related to pulse rate determinations.

In view of the arguments set forth above and other distinctions, Applicants respectfully request that the rejection of claim 5 and the claims depending therefrom under 35 U.S.C. § 102 be withdrawn. Further, Applicants request that the Examiner provide an indication of allowance for claim 5 and the claims depending therefrom.

Double Patenting

In the Office Action, the Examiner provisionally rejected claim 1 on the grounds of statutory-type double patenting as claiming the same invention as that of claim 1 of co-pending Application No. 11/039,529. The Examiner also provisionally rejected claim 14 on the grounds of statutory-type double patenting as claiming the same invention as that of claim 13 of prior U.S. Patent No. 6,836,679. However, claims 1 and 14 are canceled by the present Response. Accordingly, these provisional rejections are moot.

The Examiner rejected claims 1-13 and 15-34 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8, 12 and 14-37 of U.S. Patent No. 6,836,679 (the '679 patent). Although Applicants do not agree with the Examiner's

rejection and respectfully assert that amendments to 35 U.S.C. § 1.54 obviate the necessity of a terminal disclaimer on any claims issuing from an application claiming a priority under 35 U.S.C. § 120, Applicants submit a properly executed terminal disclaimer attached hereto as Appendix A. Applicants respectfully submit that the terminal disclaimer obviates the Examiner's obviousness-type double patenting rejection.

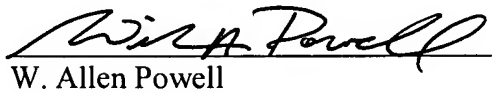
Conclusion

If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

In accordance with 37 C.F.R. § 1.136, Applicants hereby provide a general authorization to treat this and any future reply requiring an extension of time as incorporating a request thereof. The Commissioner is authorized to charge the requisite fee of $120 for a one month extension, the fee of $130 for the Terminal Disclaimer, and any additional fees which may be required, to the credit card listed on the attached PTO-2038. However, if the PTO-2038 is missing, if the amount listed thereon is insufficient, or if the amount is unable to be charged to the credit card for any other reason, the Commissioner is authorized to charge Deposit Account No. 06-1315; Order No. TYHC:0110-5 (009103-009632US).

Respectfully submitted,

Date: December 11, 2006



W. Allen Powell
Reg. No. 56,743
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281-970-4545